

# Genetic polymorphisms and response to medications for alcohol use disorders: a systematic review and meta-analysis.

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## Abstract

### AIM:

To assess whether response to medications for alcohol use disorders varies by genotype.

### METHODS:

Systematic review and meta-analysis.

### RESULTS:

We found no studies that assessed the clinical utility of genotype-guided dosing strategies or genotype-guided medication selection, and none randomized by genotype. All included studies assessed the association between genotype and response to medication. Of 15 included studies, eight (n = 1365 participants) assessed variation in naltrexone response and polymorphisms of OPRM1. Our meta-analyses for return to heavy drinking found no significant difference between A allele homozygotes and those with at least one G allele, both without (risk difference: 0.26; 95% CI: -0.01-0.53; n = 174) and with inclusion of studies rated as high or unclear risk of bias (risk difference: 0.14; 95% CI: -0.03-0.3; n = 382). For all other polymorphism-medication pairs, we found just one eligible study.

### CONCLUSION:

Estimates of effect for return to heavy drinking suggest it is possible that patients with at least one G allele of A118G polymorphism of OPRM1 might be more likely to respond to naltrexone, but confidence intervals were wide; additional studies are needed to improve confidence in the estimates.

### KEYWORDS:

OPRM1; alcohol; alcohol dependence; alcohol use disorder; naltrexone; opioid receptor; pharmacogenomics; polymorphism; systematic review

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